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IS 1282 (1968): Bicycle Cotter Pins, Washers and Nuts [TED 16: Bicycles]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard
SPECIFICATION FOR
BICYCLE COTTER PINS, WASHERS ~~AND~~ NUTS
(*First Revision*)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR BICYCLE COTTER PINS, WASHERS AND NUTS (First Revision)

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Indian Standard
SPECIFICATION FOR
BICYCLE COTTER PINS, WASHERS AND NUTS
(*First Revision*)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 14 October 1968, after the draft finalized by the Bicycles Sectional Committee had been approved by the Mechanical Engineering Division Council.

0.2 This standard was originally issued in 1958. The present revision has been taken up to express the various dimensions in metric units only rationalized to the extent practicable. Reference has also been made to bicycle threads as an interim measure till the changeover to metric system is effective.

0.3 This standard is one of a series of Indian Standards on bicycles, their parts and accessories, prepared by the Institution at the instance of the Tariff Commission and the Development Council for Bicycle Industry.

0.4 Bicycle cotter pins covered in this standard are intended for fitting on the cranks of two standard sizes (22 and 24) of bicycles, in use in the country. Washers of two types, namely, plain and spring, have been covered in this specification. The purchaser should indicate in his enquiry and order, the type of washer required with the cotter pin wherever these are used.

0.5 It may be pointed out that the requirements in regard to materials specified in this standard are only the minimum and the use of other materials having characteristics equivalent or superior to those specified in the standard is not precluded.

0.6 In preparing this standard, assistance has been derived from Data Sheet No. 33a, Sheet No. 4 (Oct 1948) 'Bottom bracket and crank assemblies, cotter, nut and washer' issued by the British Cycle and Motor Cycle Manufacturers and Traders Union Ltd.

0.7 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS:2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Rules for rounding off numerical values (*revised*).

1. SCOPE

1.1 This standard covers the requirements for bicycle cotter pins, their washers (spring and plain) and nuts for two standard sizes (22 and 24) of bicycles in use in the country.

2. MATERIAL

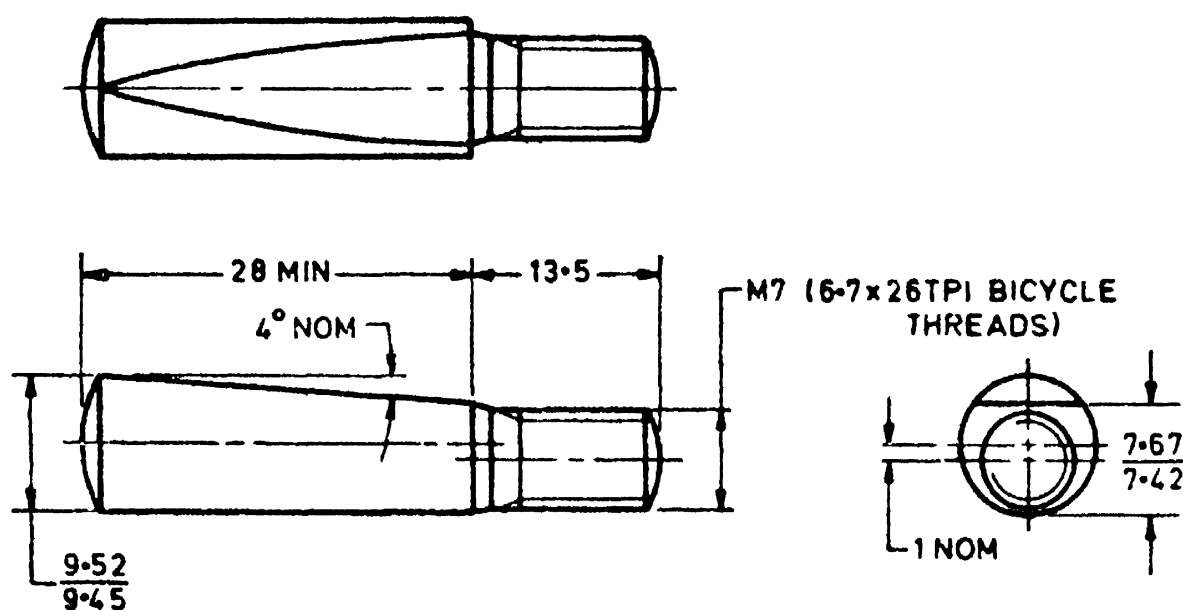
2.1 Cotter pins, plain washers and nuts shall be manufactured from steel conforming to IS: 226-1962*.

2.2 The spring washers shall be manufactured from spring steel having a minimum tensile strength of 70 kgf/mm² and at least 15 percent elongation (gauge length $5.65 \sqrt{A}$) when tested according to IS: 1521-1960†. Suitable steels for this purpose may be selected from IS: 1570-1961‡.

3. DIMENSIONS

3.1 The main dimensions for cottor pins shall be as given in Fig. 1.

3.2 The main dimensions for nuts shall be as given in Fig. 2 (see also IS: 1364-1967§).



All dimensions in millimetres.

FIG. 1 DIMENSIONS FOR COTTER PINS

*Specification for structural steel (standard quality) (third revision). (Since revised).

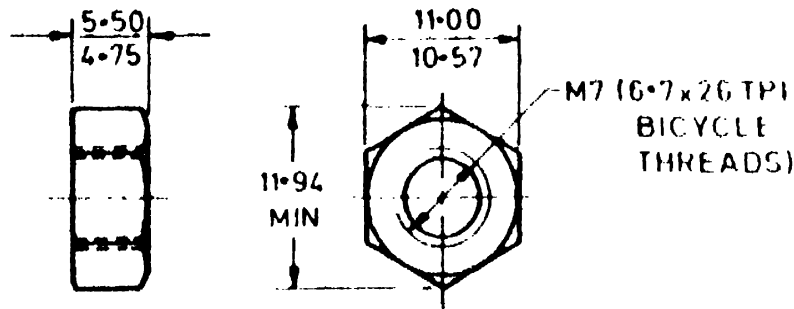
†Method for tensile testing of steel wire. (Since revised).

‡Schedules for wrought steels for general engineering purposes.

§Specification for precision and semi-precision hexagon bolts, screws, nuts and lock nuts (diameter range 6 to 39 mm) (first revision).

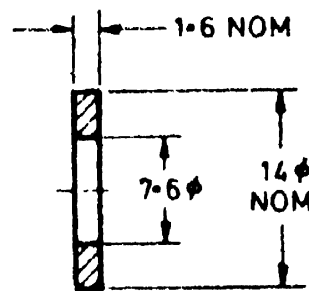
3.3 The main dimensions for plain washers shall be as given in Fig. 3 (*see also* IS:2016-1967*).

3.4 The main dimensions for spring washers shall be as given in Fig. 4 (*see also* IS:3063-1965†).



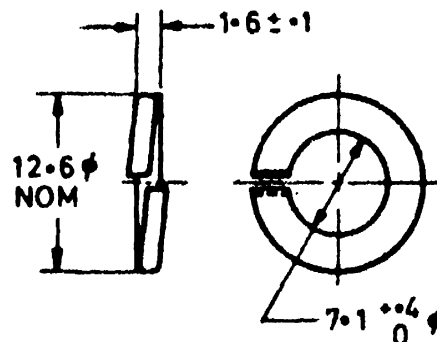
All dimensions in millimetres.

FIG. 2 DIMENSIONS FOR NUTS



All dimensions in millimetres.

FIG. 3 DIMENSIONS FOR PLAIN WASHERS



All dimensions in millimetres.

FIG. 4 DIMENSIONS FOR SPRING WASHERS

*Specification for plain washers (first revision).

†Specification for spring washers for bolts, nuts and screws. (Since revised)

4. WORKMANSHIP AND FINISH

4.1 The slope and cut of cotter pins shall be as given in Fig. 1 so as to facilitate accurate and tight fitting of the cranks on the centre axle. The threaded portion shall be accurate so as to facilitate tightening of the nuts to keep the cranks free from any shake or play.

4.2 Cotter pins, washers and nuts shall be zinc plated to Service Condition No. 2 (Classification No. Fe Zn 12) of IS: 1573-1970* or cadmium plated to Service Condition No. 2 (Classification No. Cd8) of IS: 1572-1968† or nickel-chrome plated to Service Grade No. 1 (Classification No. S Ni10b Cr r) of IS: 1068-1968‡.

5. PACKING

5.1 Cotter pins, washers and nuts shall be wrapped in waterproof greased paper and then securely packed in strong cardboard boxes in accordance with the best prevalent trade practice. The boxes shall be labelled with the manufacturer's name or trade-mark, particulars of quantity and description of contents; and name of country of origin.

5.1.1 The cardboard boxes may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act, 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6. SAMPLING

5.1 Unless otherwise agreed to between the supplier and the purchaser, the procedure as given in IS: 2500 (Part I)-1963§ shall be followed for sampling inspection. The inspection level and sampling plan as given in 6.1.1 and 6.1.2 shall be followed.

6.1.1 The scale of sampling shall be corresponding to inspection level IV given in Table I of IS: 2500 (Part I)-1963§.

6.1.2 The sampling plan to be followed shall be corresponding to Acceptable Quality Level (AQL) value of 2.5 percent given in Table II of IS: 2500 (Part I)-1963§.

*Specification for electroplated coatings of zinc on iron and steel (*first revision*).

†Specification for electroplated coatings of cadmium on iron and steel (*first revision*).

‡Specification for electroplated coatings of nickel and chromium on iron and steel (*first revision*).

§Sampling inspection tables: Part I Inspection by attributes and by count of defects. (Since revised).

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